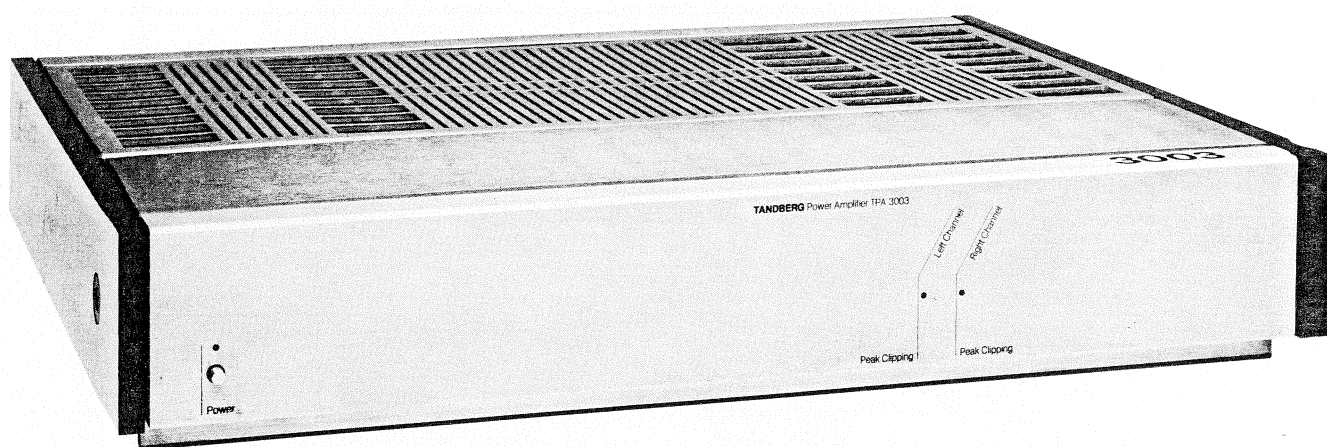


# **TANDBERG**

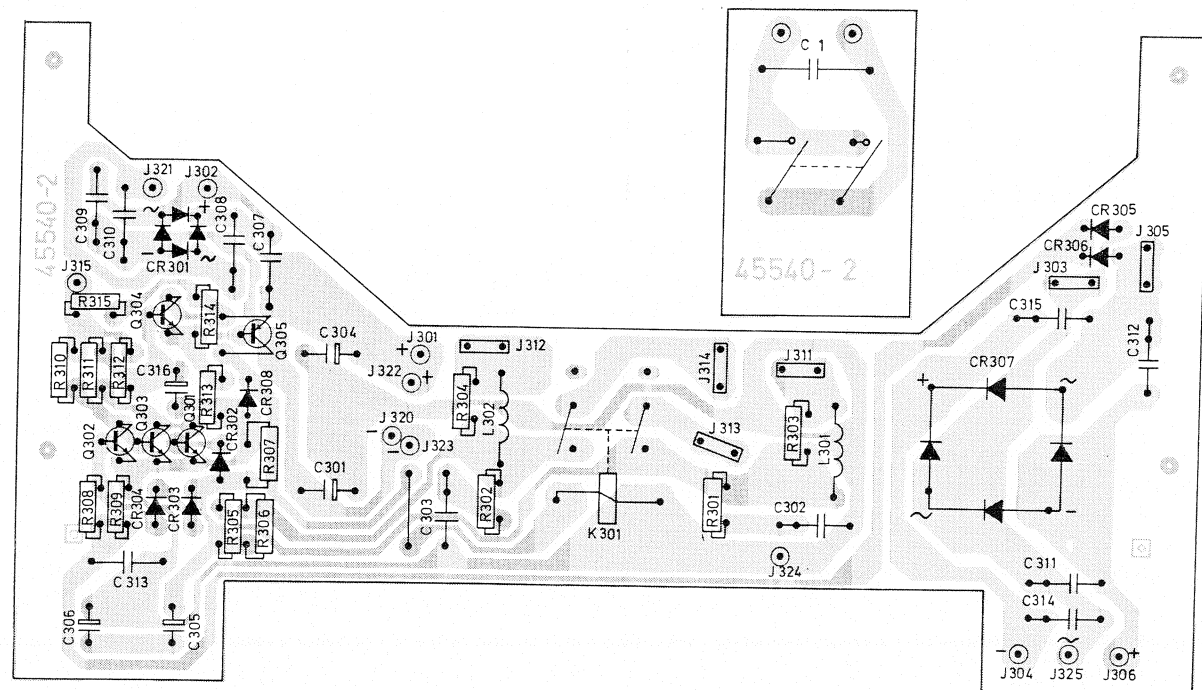
## Power Amplifier 3003

### Circuit Diagram and Alignment Instructions

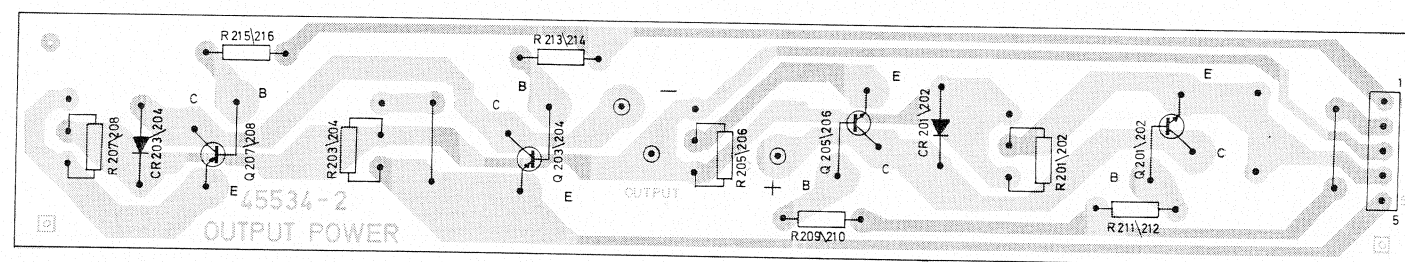


**TANDBERG** — The European Alternative

*Power amplifier board, right channel*



Power supply board



Output power amplifier board

## Adjustments

### Quiescent current

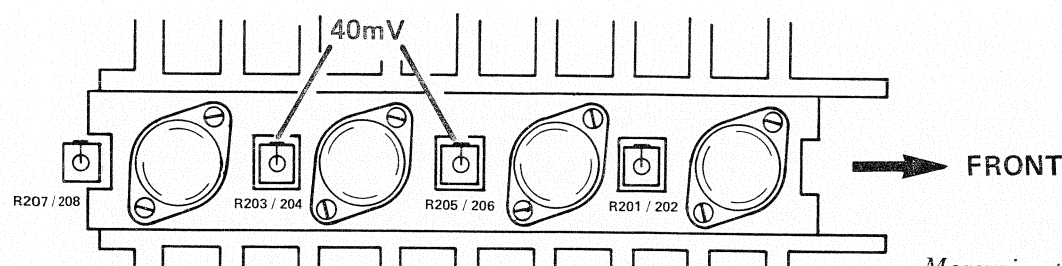
#### Test condition:

Approx. 10 min. warming up time from cold condition without signal applied.

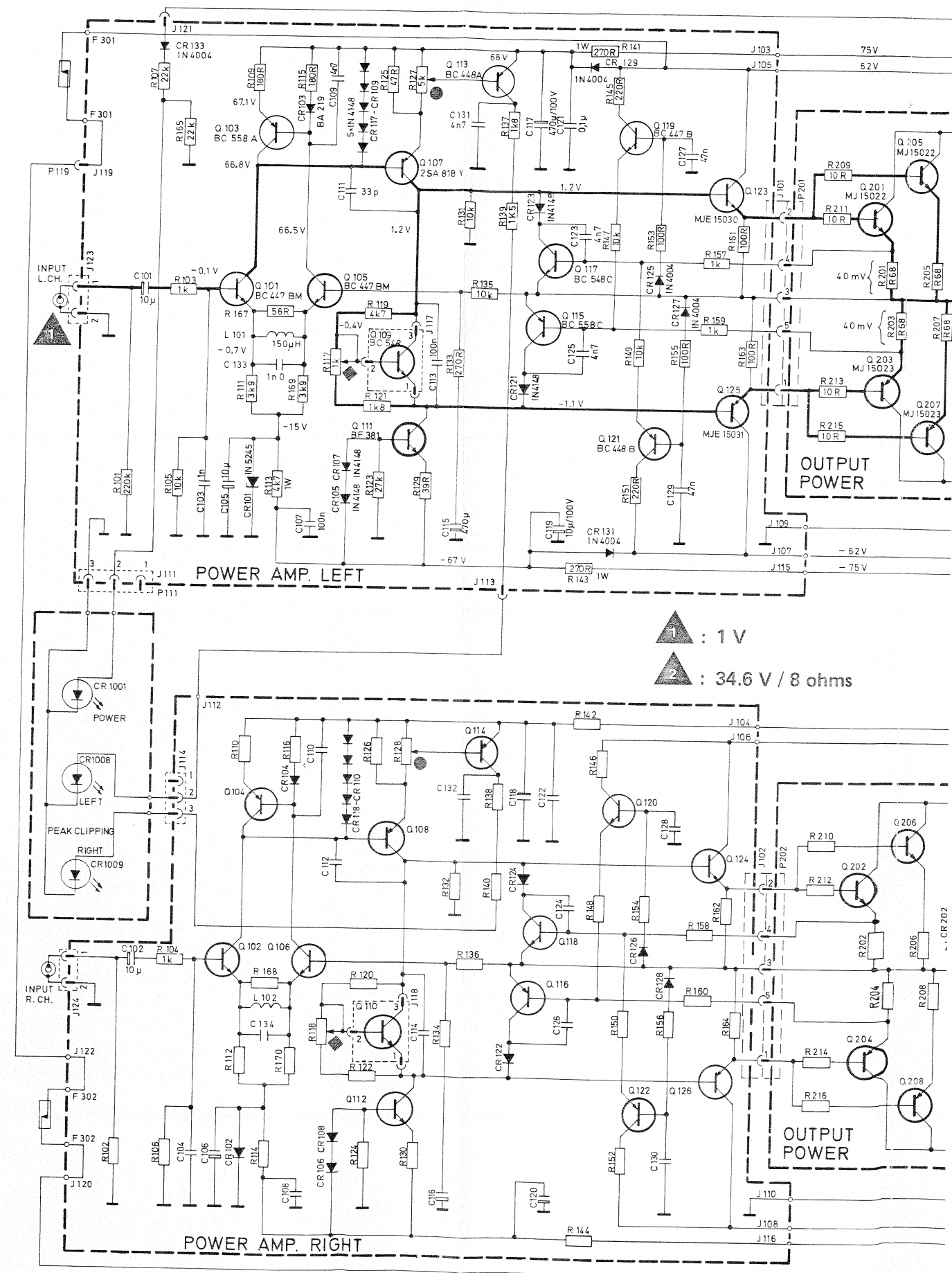
- Connect a VTVM across R203/R204 for left/right channels respectively, i.e. between the top terminals of R203 and R205/R204 and R206, see figure.
- Adjust R117/R118 (◆) for 40 mV reading on the VTVM.

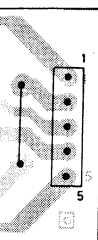
### Peak clipping

- Connect an oscilloscope to left/right speaker output across 8 ohms load.
- Apply a 1 kHz signal and drive the amplifier to just below clipping point.
- Adjust R127/R128 (●) so that the Peak Clipping indicators on the front lights up. Then fine adjust the potentiometers down until the lights just goes off.



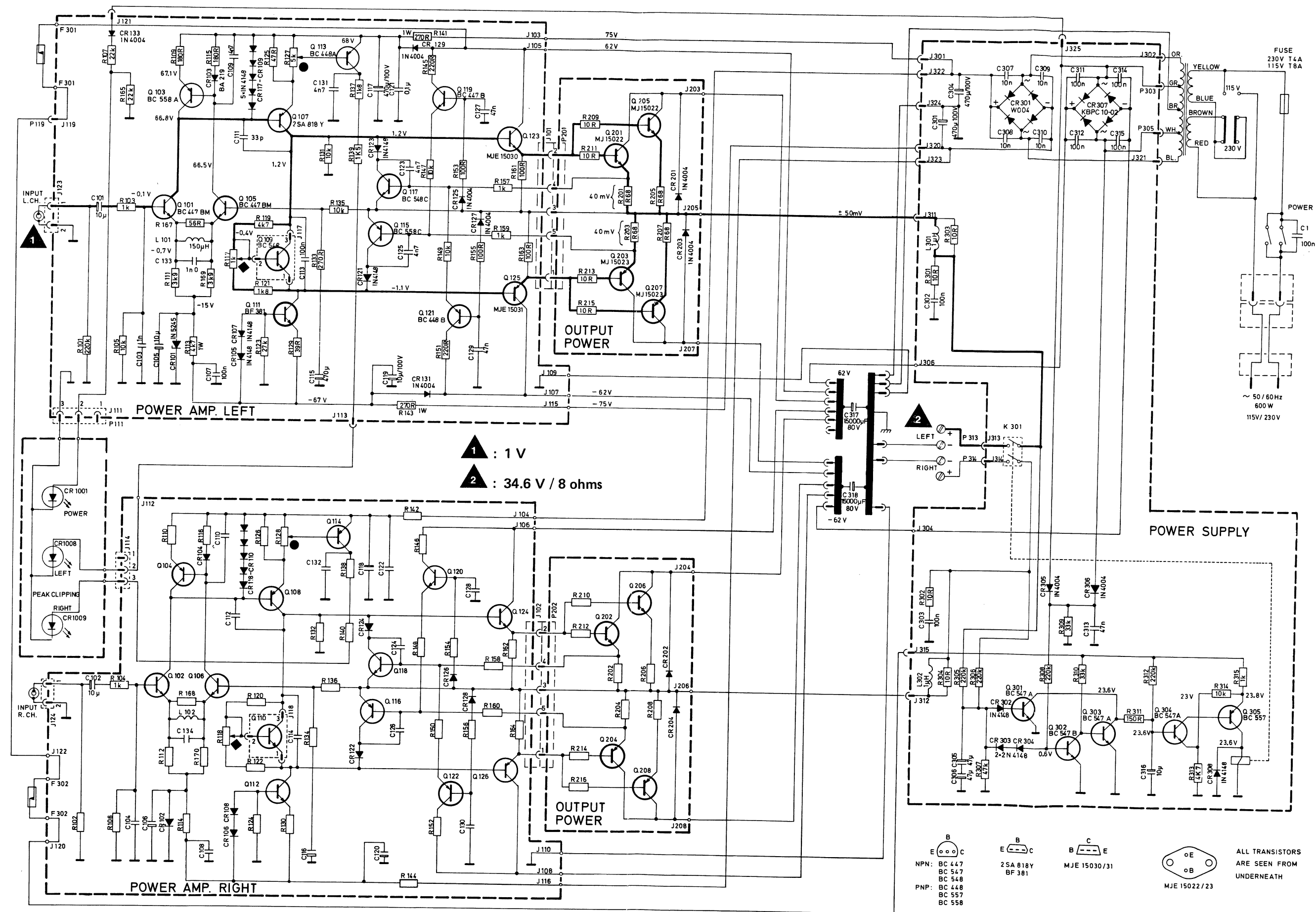
Measuring point, quiescent current.





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Circuit diagram

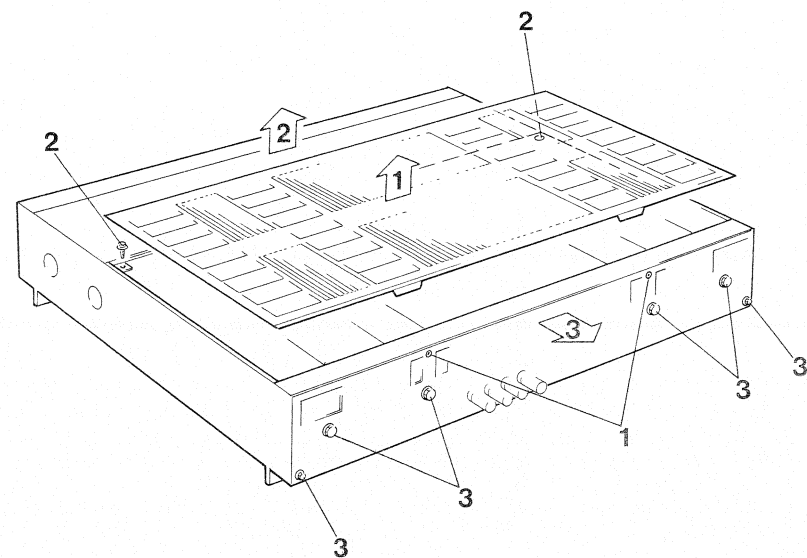
◆ Quiescent current

● Peak clipping

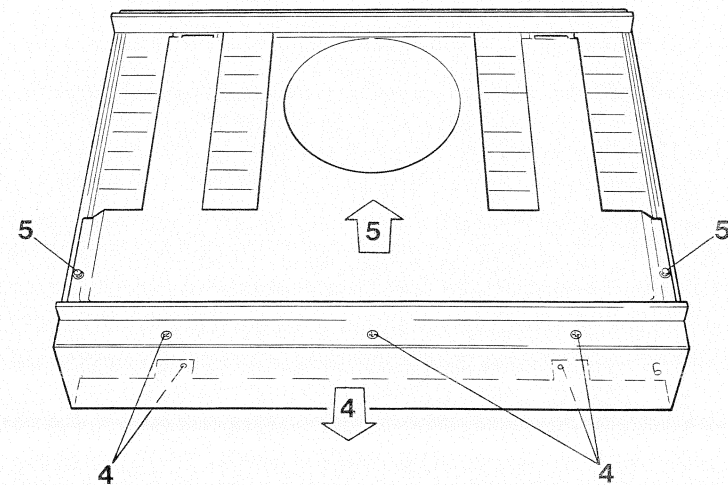


Dismantling

- Top cover, rear (1)
- Top cover, front (2)
- Rear panel (3)
- Front panel (4)
- Bottom cover (5)



Dismantling the rear and top covers.

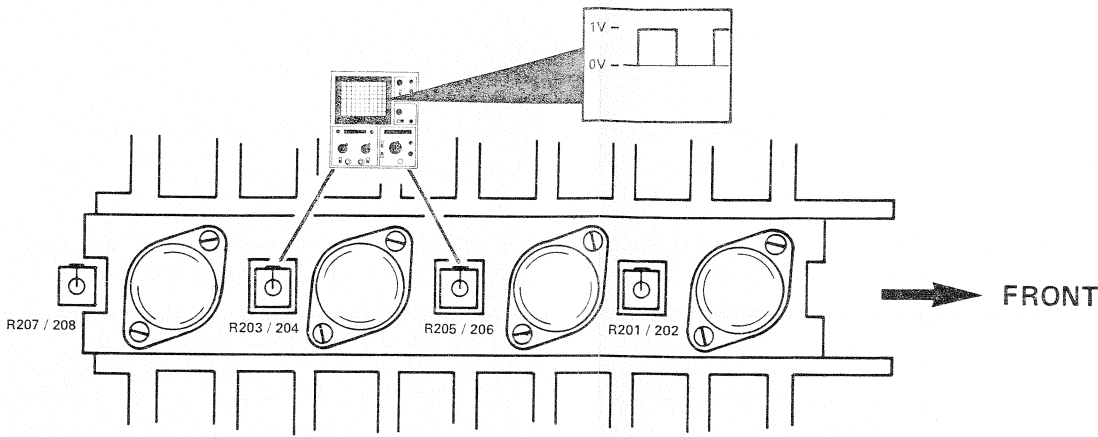


Dismantling the front and bottom covers.

Service hints

Checking the shortcircuiting protection circuit

- Connect an oscilloscope across R203/R204 for left/right channels respectively, i.e. between the top terminals of R203 and R205/R204 and R206 see figure.
- Shortcircuit the output terminals (+ to -).
- Apply a signal of 0.1 V to the input terminals.
- The oscilloscope should then show the following picture:



Checking the shortcircuiting protection circuit.

Checking the speaker protection relay

If some fault occurs in the output power circuits, causing d.c.-voltages at the speaker outputs the relay should disconnect the speakers to prevent damage.

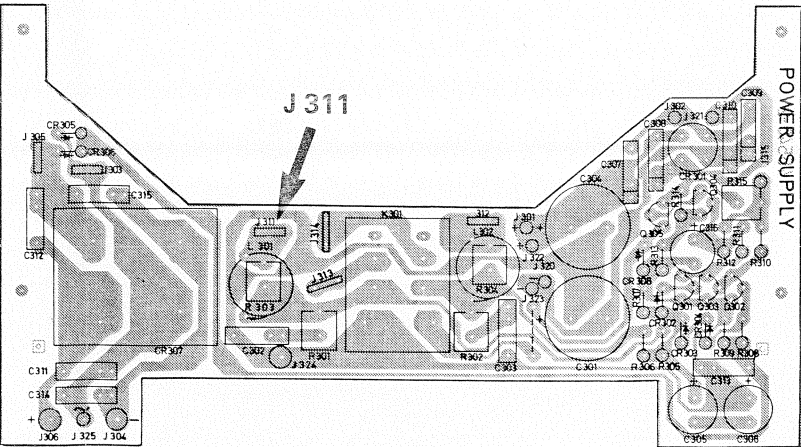
- Disconnect white wire from the output transistors at terminal J311, see figure.
- Disconnect speaker load.
- Apply 6 to 8 V d.c. (+ and - alternately) to J311. The relay should then open.

What to check after replacement of power transistors

After having replaced a defective power transistor the following components should be checked with an ohmmeter and replaced if necessary.

The component numbers refer to the left channel.

R157/159	Q109
R161/163	Q123/125/115/117
R209/211/213/215	CR109-117
R201/203/205/207	CR121/123

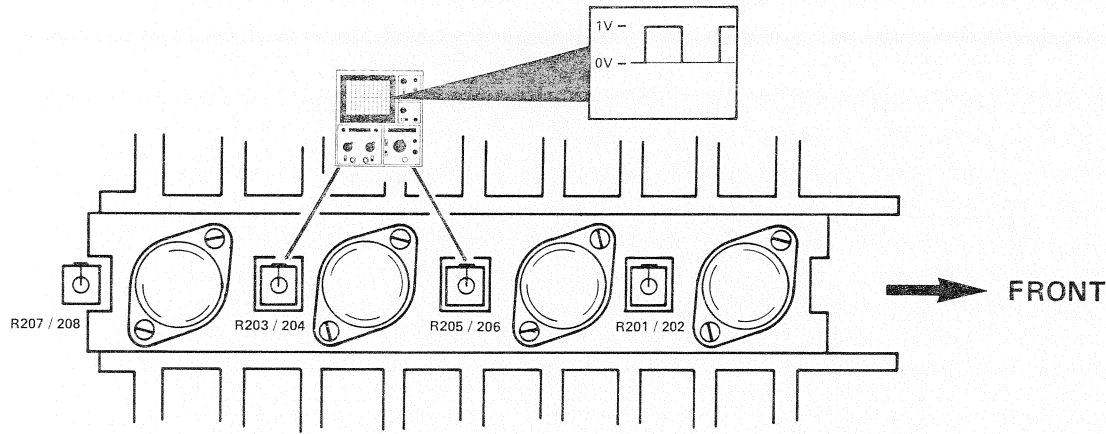


The power supply board seen from the component side.

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